



UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office

Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

MAS

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
-----------------	-------------	----------------------	---------------------

02/01/00

02/01/00

ROBERT ELM

1

0240-710114

┌

1022/0410

└

EXAMINER

THOMAS C. PONTANI

COHEN PONTANI LIEBERMAN & PAVANE

101 FIFTH AVENUE

SUITE 1710

NEW YORK NY 10176

LENNER

ART UNIT	PAPER NUMBER
----------	--------------

1725

DATE MAILED:

04/10/00

7

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/462,024

Applicant(s)

RAHMFELD, WERNER

Examiner

Kevin P. Kerns

Art Unit

1725

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED. (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☐ Claim(s) 11-20 is/are rejected.
- 7) ☐ Claim(s) 13 and 14 is/are objected to.
- 8) ☐ Claims ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on 03 February 2000 is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892) 18) ☐ Interview Summary (PTO-413) Paper No(s) ____
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 19) ☐ Notice of Informal Patent Application (PTO-152)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ 20) ☐ Other:

DETAILED ACTION

Drawings

1. The corrected or substitute drawings were received on December 30, 1999. The Figure 5 drawings are now acknowledged as Figures 5a and 5b.
2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "14" has been used to designate both a rectangular part and a "spade-shaped" part. Correction is required.
3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: "47" in Figures 1, 2, and 4; "D_E" and "d" in Fig. 1; and "B" in Figures 5a and 5b. Correction is required.
4. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: "section aa", described in the specification on page 9, line 9; and "52" (narrow faces), described in the specification on page 11, line 18. Correction is required.

Specification

5. The abstract of the disclosure is objected to because the first sentence is unclear as written. Correction is required. See MPEP § 608.01(b).
6. 35 U.S.C. 112, first paragraph, requires the specification to be written in "full, clear, concise, and exact terms." The specification is replete with terms which are not clear, concise and exact. The specification should be revised carefully in order to comply with 35 U.S.C. 112, first paragraph. Examples of some unclear, inexact or

verbose terms used in the specification are as follows: "parts" and "plates" are used interchangeably on numerous occasions. The meanings of the terms "wedge-shaped", "spade-shaped", and "shadow region" are indefinite in view of the specification and/or the drawings.

7. The disclosure is objected to because of the following informalities: the language used in the specification contains numerous grammatical and idiomatic errors that render portions of the specification unclear. Two of the German references numbers are incorrect as follows: on page 1, line 9, "828" should be changed to "829". On page 1, line 20, "38" should be changed to "36". On page 11, line 19, "envelopes" should be changed to "envelops". Corrections and/or clarifications are required for these and other errors that occur throughout the specification.

Claim Objections

8. Claims 13 and 14 are objected to because of the following informalities: in claim 13, line 4, "o" should (probably) be changed to "of". In claim 14, line 4, "an" should be changed to "a". In claim 14, line 6, a comma should be added after "mold". Appropriate correction is required.

Claim Rejections - 35 USC § 112

9. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

10. Claims 11-20 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable

Art Unit: 1725

one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. "Parts" and "plates" are used interchangeably on numerous occasions throughout claims 11, 13-18, and 20. The meanings of the terms "wedge-shaped", "spade-shaped", and "shadow region" are not enabling by claims 11, 13, 14, and 16 in view of the specification and/or drawings.

11. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

12. Claims 11-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims are generally narrative and indefinite, failing to conform with current U.S. practice. They appear to be a literal translation into English from a foreign document and are replete with grammatical and idiomatic errors. All claims should positively and directly set forth the metes and bounds of the invention.

The term "broad" in claims 11, 13, and 14 is a relative term which renders the claims indefinite. The term "broad" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

The term "narrow" in claims 11-14 is a relative term which renders the claims indefinite. The term "narrow" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

The term "shadow region" in claims 11, 13, 14, and 16 is an unclear term which renders the claims indefinite. It is unclear to what location the "shadow region" is referring, and whether this "shadow region" is static or variable with respect to other structures in the drawings.

The terms "part" and "parts" in claims 11, 13-18, and 20 are unclear terms which render the claims indefinite. It is unclear to what specific region these "parts" are referring, and whether or not these "parts" should be interchangeably used with the terms "plates" and/or "surfaces".

The terms "planar surfaces in a region of the immersion nozzle which is shaped in the form of a spade" in claim 11 are relative terms which render the claim indefinite. It is unclear to what specific region these surfaces are referring.

The term "up to a longitudinal extent" in claim 11 is a relative term which renders the claim indefinite. It is unclear to what specific region and to what extent the "longitudinal extent" is referring.

Regarding claim 11, the phrase "surface-like" renders the claim(s) indefinite because the claim(s) include(s) elements not actually disclosed (those encompassed by "or the like"), thereby rendering the scope of the claim(s) unascertainable. See MPEP § 2173.05(d).

Claim 12 recites the limitation "the slab narrow faces". There is insufficient antecedent basis for this limitation in the claim.

Claim 13 recites the limitation "the planar slab central part". There is insufficient antecedent basis for this limitation in the claim.

Claim 14 recites the limitations "the charging region", "the broad-face parts", "the narrow face parts", "the planar-surface central plate", "the planar side plates", and "the mouth of the mold". There is insufficient antecedent basis for these limitations in the claim.

Claims 14 and 18 recite the limitation "the planar-surface central part". There is insufficient antecedent basis for this limitation in the claims.

Claim 16 recites the limitation "the strand conveying direction". There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

14. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

15. Claims 11-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pleschiutchnigg (US 5,839,503) in view of Coassin (US 5,460,220).

Pleschiutschnigg teaches a method and apparatus for continuous casting of slabs in which the guide members include both narrow and broad sides of adjustable width, as well as multiple rollers of tapering conical shape (abstract; column 2, lines 24-32; column 3, lines 11-20; and Figures 1-5). An immersion nozzle feeds the molten metal into the mold, in which the mold may or may not be linearly symmetrical with respect to the center axis and the strand guidance axis (planar and parallel with respect to contour lines and interior surfaces), for either a concave or convex slab, depending on geometrical preference (column 3, lines 11-32 and 58-62; and Figures 1-5). Noncylindrical rolls that bend under load up to the last roller of the strand guide can be reached by the crater end, and these rolls are supported in bearings and serve as guides for the strand (column 3, lines 35-44; and Figure 1). The first and second pairs of adjustable side plates (for reducing slab thickness) contain cooling means (column 1, lines 58-61). The camber (taper) extends from a vertical portion (longitudinal extent) of the mold height, preferably in the upper 30% (column 1, lines 62-67; and Figures 1-3). In the adjusting region of the narrow side plates of the mold, an inclination angle is adjustable at less than 5 degrees, and a crowned surface would be produced (column 3, lines 21-26; and Figure 3). Pleschiutschnigg does not specifically disclose length parameters of planar surfaces and separate rollers of differing geometries.

However, Coassin discloses a method and mold for the continuous casting of thin slabs containing a casting nozzle, a mold, and adjustable side walls to adjust the slab cross-section (column 5, lines 61-67; column 6, lines 1-5; and Figures 1-4). Transverse rolls of various geometries may be divided into two or more segments in

cooperation with intermediate bench supports (wedge-shaped connecting pieces) defining a passage equal to the outlet section of the terminal segment of the mold (column 6, lines 22-38; and Figures 1-4). An angle α defines the angle between inlet (A) and outlet (B), from which a central curve defining enlargement and depth to obtain length parameter L, the values of which can range from 30-90 mm for A, 1-12.5 mm for B, and greater than 500 mm for L, is obtained (column 6, lines 49-67; column 7, lines 1-18, 32-36, and 53-66; column 8, lines 6-13; and Figures 1-4). The adjustable length/surface parameters are advantageous for the purpose of avoiding excess loading of the narrow sides of the mold with combined bending and compressive stresses (column 5, lines 30-34).

It would have been obvious to one of ordinary skill at the time the applicant's invention was made to combine the elements of the continuous casting apparatus disclosed by Pleschiutchnigg with the geometrical parameters of optimum surface lengths and angles, as taught by Coassin, in order to avoid excess loading of the narrow sides of the mold with combined bending and compressive stresses (Coassin; column 5, lines 30-34).

Conclusion

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The Kolakowski et al., Streubel et al., Pleschiutchnigg et al., Schrewe, Streubel, Arvedi et al., Pleschiutchnigg, and Urlau et al. references are also cited to show the state of the art. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin P. Kerns whose

Art Unit: 1725

telephone number is (703) 305-3472. The examiner can normally be reached on Monday-Friday from 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Dunn can be reached on (703) 308-3318. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-7718 for regular communications and (703) 305-3602 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

KPK
kpk
April 6, 2001

Tom Dunn
TOM DUNN
PRIMARY EXAMINER
Art 1725